



SEQUENCE LISTING

<110> YE, Jane et al.

<120> ISOLATED HUMAN RAS-LIKE PROTEINS,  
NUCLEIC ACID MOLECULES ENCODING THESE HUMAN RAS-LIKE  
PROTEINS, AND USES THEREOF

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<141> 2001-03-27

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APR 16 2003

TECH CENTER 1600/2900

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35          40          45
Thr Ile Glu Val Asp Gly Ile Lys Val Arg Ile Gln Ile Trp Asp Thr
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aggtgtgaag cagtgggggtg acctgagagg agaggatggg gtggccttgc ctcaaggctt 240  
gggcccctgc taggtgtcgc tctgcctcag gcctctgttt ctctcctga cacaggcaca 300  
ractcggcct cccacccctt cccaaggac atgaccttgg gaaggaacat atctgaagcc 360  
cgcgagggtt ttccgctgct gtgcatctgt gccacagatc cgcagatgca cccacagctg 420  
ggagcaccgg ttccctccgc ctacctgcac tccctggttt ctgttccttc ctctcctcc 480  
ttccttctcc ccgctcccca gacaggctgg tgatgagctt tataacatga aagctgatat 540  
ttggccatta tccttctacc ctgattgcc a gctcttctca gagtgccttc ttctgtaatc 600  
c 601

<210> 17  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 17  
ctgggtgaagg ctttgaagag gaagtgcacat ttgagtggag tcttgaagac taggcaggat 60  
tctccagggg ccctgggtgt gggggaagca cacatcctct tccctgtagg aggtgctgtg 120  
gagaacacct ccagtggggc tgctactctt cagccttgcg ggggccagct ggagtggcca 180  
caccatggtc acaccagctg aagttcaaga agcccttgc caggagattg ctttgctggc 240  
tctgggtgag ggcaggtgca tctggaagcc ccttctcttc taagatgttt gctcctgagt 300  
ytctatgtcc tagtcttttc ttccctgaac ttttctctac cagtcagcac agccctgcct 360  
gagaaggagg ctggaggagt gagtggtcag tagcctgggtg ggtcttggct gcctctgttg 420  
tgcccgcctg cctaagtagc aggcttaggg aggcgagacc cagttccagg ggctgccaat 480  
ggggagcgag atgggggtggc tggagcacac tgcacatgtc accaaggctc tagggagggtc 540  
tgtgcacaag gcagtgggaa aagcaagggg aagaccagc ctgggtcaaca tgggtgaaacc 600  
c 601

<210> 18  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 18  
agatttgggt gaggacacag ccaaaccata tcagctcccg ggatccctgt gtgaatgggg 60  
tcttttttgg tgtttgaggg ctgcacaggg tgacctctt agaggtgacc tcttgccaca 120  
accacagga ggtgcacatg gccacacat gctggtttcc tgcagtggga ggggctgggg 180  
cactcctggg acctgtgctt ggtaactgga gctggcctgg ccctggggat tgggtgtctg 240  
ccttgggttt caggtgtatt aggttgttcc tcgttgtgga gtctcattac taatgaaaag 300  
ytcaggtcgc actgctgggt ctttgggctg tggttgatcc tgggtgataac atttggcacc 360  
cagaggcagc cctgtttcca ctgaagcatg cggagcttgg ctggcaggca ggcaagctgg 420  
cagctgccct taacctatga ggtgctggcc cgctagtagg cacaccctac ctgtgccaga 480  
attgaggttg tagccagact ccaggagcca tctgggcccc acagggggcg gcatttcttc 540  
tttttgttga aacattccag ccaagtgtct gcttgggctt catctctctg tcccactctc 600  
c 601

<210> 19  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 19  
ccctgtgtta tgggttttac accttatctc acaatcttaa aaaaaaatt ctctgagaat 60

```

cctctgtcac cccacttta caggtgagga aactgaggca aagataggct aactggcttc 120
cccaacacca tgcaggtaat tagtgataaa ggcaggggtg gaaccaaact tgacctccca 180
attgtgctct taatggccag gacactctgt gtcttgagcc acacttcctc catgttttct 240
agggttttct agggaggcag acagtgatgg gaaggggtgt tctttagtgt ggatgtgccc 300
ygctgctcc tttctgtaag cgtcacagca cctccactgc tgtactgggg aggcaccaag 360
tttttccctg tttgcccacc caaggcgagc tagcttagga gtcacgtgag tgctgggtgt 420
ctgcctgct gcatccctct atcctgcccc tgccccgggt gccagagga gggccctgcc 480
tgtcttccca gttctccaac agcagcgctg tcccagcacc ctcggtctcc agttgtggcc 540
tggcagctgc tggggcagac accatacaga cagagtcaca gcaggaagag gatggggccc 600
a 601

```

```

<210> 20
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 20
ggaaggggtg ttcttttagtg tggatgtgcc ctgcctgctc ctttctgtaa gcgtcacagc 60
acctccactg ctgtactggg gaggcaccaa gtttttccct gtttgccac ccaaggcgag 120
ctagcttagg agtcacgtga gtgctgggtg tctgcctgc tgcacctcctc tatcctgcc 180
ctgcccccg tgcccagagg agggccctgc ctgtcttccc agttctccaa cagcagcgt 240
gtcccagcac cctcgggctc cagttgtggc ctggcagctg ctggggcaga caccatacag 300
mcagagtcac agcaggaaga ggatggggcc cagggtgct gcctcaggcc atggctgcat 360
ggcaccatca gttgattgag gagcttttct tgccaatgtc tgaggcatca ggtggcagga 420
cacgtctccc tgctcttaag cctcaggcat gcagcccttc ttatgctctc tggggtgagg 480
gggagatccc cctcatggaa ttgctttttt tttttttttt ttttttttga gacagggtcc 540
tgctctgtca ctcaggctgg agtgcagcct caacctccca gactcaagtg atcctcctgc 600
c 601

```

```

<210> 21
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> variation
<222> (301)...(301)
<223> 't' may be either present or absent

```

```

<400> 21
tctccaacag cagcgtgtgc ccagcaccct cgggctccag ttgtggcctg gcagctgctg 60
gggcagacac catacagaca gagtcacagc aggaagagga tggggcccag ggctgctgcc 120
tcaggccatg gctgcatggc accatcagtt gattgaggag cttttcttgc caatgtctga 180
ggcatcaggt ggcaggacac gtctccctgc tcttaagcct caggcatgca gcccttctta 240
tgctctctgg ggtgaggggg agatccccct catggaattg cttttttttt tttttttttt 300
tttttgagac agggctcctgc tctgtcactc aggtggagt gcagcctcaa cctcccagac 360
tcaagtgatc ctctgcctc agcctccga gtagctggga ccacaggtgg acaccatcac 420
acctgggttt ttttgttttt tgttttttgt tttctagaga tggggtctca ctttcttgct 480
cagctctggc tcgaactcct gggcgcaagc agtctccca cctcgtcttc ccaaagtgtt 540
tggattacag gtgtgagcca ctgtgcttgg cctttttatt tatttagaat ttgttttgga 600
a 601

```

```

<210> 22
<211> 601
<212> DNA
<213> Homo sapiens

```



```

<400> 22
ggatgtttct tccatgacat atatagctct tgaaactact tctatctaata atcaccacaca 60
gtgctgttaa aaatacagat ttctgggcct caccctcaaa ttatgattca gtaggtctag 120
gcacgtcaag gtcattgttt ttgtctttgt ttttaagtcac cccaggtgat tctaaagccg 180
aagctctgca aagcacacct tgagaaacag agaactcttg tgctctcgct ctcttgacac 240
ttcaggtgca aaacttttgt cctaattgtcg ttctcaaact tacgcatgtg tgagaatcac 300
ygtgagagct tattgaaact gattgcggga ccccatacct agagggcctg attctatagg 360
tctgaggtaa ggccaagaa tttgcatatt tgcatttcgt tttcttttcc tttcttttct 420
tttttttttt ttttgagatg aagtctcacc ctgtcgccca gactggagtg cagtggcatg 480
atctcagctc actgcagcct ctgcctcctg gggttaaagcg attctcccca caccacagac 540
ccgctcctga gtagctggga ttacaggtgc ccgccaccat gactagctaa cgtttgtatt 600
t
601

```

```

<210> 23
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 23
aggcacgtca aggtcattgt ttttgtcttt gttttaagtc accccaggtg attctaaagc 60
cgaagctctg caaagcacac cttgagaaac agagaactct tgtgctctcg ctctcttgac 120
acttcaggtg caaaactttt gtcttaattgt cgttctcaaa cttacgcatg tgtgagaatc 180
actgtgagag cttattgaaa ctgattgcgg gaccccatat ctagagggcc tgattctata 240
ggctgagagt aaggccaag aatttgcata tttgcatttc gttttctttt cctttctttt 300
yttttttttt ttttttgaga tgaagtctca cctgtctgcc cagactggag tgcagtggca 360
tgatctcagc tcactgcagc ctctgcctcc tgggttaaag cgattctccc cacaccccag 420
acccgctcct gagtagctgg gattacaggt gcccgcacc atgactagct aacgtttgta 480
tttttagtag agacgggggt ttcacatgt tggccaggct ggtctcaaac tcctgacctc 540
aggtgatcca ctcacctcag cctcccaagg tcttgggatt actggtgtga gccaccgcgt 600
g
601

```

```

<210> 24
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 24
tgcagcctct gcctcctggg ttaaagcgat tctccccaca cccagaccc gctcctgagt 60
agctgggatt acaggtgccc gccaccatga ctagctaacg tttgtatttt tagtagagac 120
gggggtttca ccatgttggc caggctggtc tcaaactcct gacctcaggt gatccactca 180
cctcagcctc ccaaggtctt gggattactg gtgtgagcca ccgctgctgg ccagaatttg 240
catttctaac aagtcacagg tgatgctgat gctgtgggtc caggacaca ctttgagaac 300
hgcttggtac tcaggcgata tgtggacagt agcgtcatct tcacctggga gcttcttgca 360
gcatctcagg ccttgcccta cacctaccag atcagaatct gcattttaac tcaatccccg 420
cgtgattctc atgcacctgg aagtttgaga aatatgacct tagaggagcc ggaatgtgaa 480
accactggag gcagagatag atggagaata tctcttcttc tcacggatac taaagatgca 540
acaaaaaggg ctgactctct ggggtgtgcac ccaggtgggg ctgatgaccg aaaagaggcc 600
a
601

```

```

<210> 25
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 25
tgtgtgtgag gccggggagt gctgcgagcc ccggaattcc tcagccttag tcccccgcca 60
catagctaag aagtgagggg ggaggtgaga aggagtcact gccagcctc acttccggtg 120

```

```

gagtaccctg tctccttgtc agttctgtct ctggggacag ttgcctgctt tcacctctcc 180
ctccatcccc tcttctctca cagggaaaaa ttcaccttaa tattggaagt tcctctccta 240
gcaaagtcct tctcaggcac ccacaggcaa aaaggaaact aagcagagtt agggcttcca 300
kgcctagcca actacacgac tctcctcttg cttccctaag aaccagcgca aggggcagcg 360
tgggttccag catagatgga cctgtgttgg aatctctgca cgtgctgtgc tgaccctggc 420
tagccattga cctctctgag cccttgtttc ctttccacta ggctctctga gggcaggggc 480
catgtctttt tcaactgctct gtctgcaact agcactgtgc agggcacata ggaagtccc 540
ataaatgttt gtgggataaa ggaaataaaa ccttctctct tcctgtcccc cttgtgatgg 600
c
601

```

<210> 26  
<211> 601  
<212> DNA  
<213> Homo sapiens

```

<400> 26
aaagtccttc tcaggcaccc acaggcaaaa aggaaactaa gcagagttag ggcttccagg 60
cctagccaac tacacgactc tcctcttgct tccctaagaa ccagcgcaag gggcagcggtg 120
ggttccagca tagatggacc tgtgttggaa tctctgcacg tgctgtgctg accctggcta 180
gccattgacc tctctgagcc cttgtttcct ttccactagg ctctctgagg gcaggggcca 240
tgtctttttc actgctctgt ctgcaactgag cactgtgcag ggcacatagg aagttcccat 300
raatgtttgt gggataaagg aaataaaaacc ttctctcttc ctgtccccct tgtgatggct 360
ttgcacaagg cactgtcctt ggccagggtt gctaggctag tgtgaggata aaccagggtat 420
attacaaatt ggagaaaatt tctcgttcct cttggaagaa ggtgctgtat catgaaacaa 480
gaatgtcttg attcccttct atgccaggta ctggggagaa acaggtgcct gataaccgtt 540
gatccaggca gaaataagca tactcctgct tcccaaggcc tgatgcttct ctccttcttc 600
c
601

```

<210> 27  
<211> 601  
<212> DNA  
<213> Homo sapiens

```

<400> 27
ccttgatga agaagcgtgg gaactctttg cttcctttcc ctcccgcagt gacatgccat 60
gccatgccac tgcctcttca tctggtccta tgacagtcac tcataagcac ccgcatgtac 120
ccggccctgc actagctcat gacagctgca gtcaattggg ccaggtgctg tatctcatcc 180
ggcctcctca gcaaccctct gagatactgg taatgtccct gatgaagata tttactgagg 240
cagaaatgga cgctcagtga agcaagggtc ctgatgttat agcaatgagc tatgagtggc 300
yagagggagg agataagctc aggcctgaca ccaaagccca tgctccttct agtcaaccac 360
agtgcctcct atggtgaatg agtgagtcag caaccaagac gcatgaggcc ttcttttttg 420
tgagccttgg ctgggtgctg aggcctcagg tacaatcatg ggttgaaga gccctcctct 480
ctctccacag tctggcacta tgacccttcc tggttattaa caaggcaaag agagagaggg 540
aagaaagcag gcaaataatg tgggttgcta ttcctagaga ttagaatttc aggaaggata 600
a
601

```

<210> 28  
<211> 601  
<212> DNA  
<213> Homo sapiens

```

<400> 28
ttctctgacc cctccccctc ggtgcgtttc gtatcaaagc tcctcaaacc ccgtcccccg 60
tgtgtcctgc tgtgtgcagc tcgctctttc cttccttccct aagctatcca aggggatgga 120
cccaggctcg tggggagggt ccacccttgg atccaggaag aaccctccac cctgcctcgt 180
gggtgggcca aaggctacag ggtgcttctt cctcttcccc caccctccact gtccctcatg 240
tgccatgggc ctgcctcccc agtgacctgc gaaagtggag catcgaggta ggagggaaac 300

```

```

rgcaaccagg gagtcctcga gcctggggct gccctacctc taccatttcc ccgaccagag 360
ctttgccctt gcttggctgc ccgcctgcct ctttggggaa ctgagctcag aggcagggtgc 420
ttcagagaag gaaacaaaat gaggggtggc agggataaaa agtcacctcc attctctacc 480
tcccatgcag catgaacaca atttctctcc acctggctcc caaattttaa gatgtggacc 540
aaggcctgtg ggtactccag gggcaaggag agccctgggg tcagtgcacac tgtcaggcca 600
a 601

```

<210> 29  
<211> 601  
<212> DNA  
<213> Homo sapiens

```

<400> 29
acccctcccc tccggtgcgt ttcgtatcaa agctcctcaa acccgtccc ccgtgtgtcc 60
tgctgtgtgc agctcgtctt ttccttcctt cctaagctat ccaaggggat ggaccaggc 120
tcgtggggag gttccaccct tggatccagg aagaacctc caccctgcct cgtgggtggg 180
ccaaaggcta cagggtgctt cttcctcttc cccaccccc actgtccctc atgtgccatg 240
ggcctgcctc ccagtgacc tgcgaaagt gagcatcgag gtaggagga aacggcaacc 300
rgggagtcct cgagcctggg gctgccctac ctctacccat tccccgacca gagctttgcc 360
cttgcttggc tgccgcctg cctctttggg gaactgagct cagaggcagg tgcttcagag 420
aaggaaacaa aatgaggggt ggcagggata aaaagtcacc tccattctct acctcccatg 480
cagcatgaac acaatttctc tccacctggc tcccaaattt aaagatgtgg accaaggcct 540
gtgggtactc caggggcaag gagagccctg gggtcagtga cactgtcagg ccaaccatgc 600
a 601

```

<210> 30  
<211> 601  
<212> DNA  
<213> Homo sapiens

```

<400> 30
gccagggact tgagaagtta tattgggcag tggctccaat ctgtggacca gtatttcagc 60
tttccctgaa gatcaggcag ggtgccattc attgtctttc tctcctagcc ccctcaggaa 120
agaaggacta tatttgtact gtaccctagg ggttctggaa gggaaaacat ggaatcagga 180
ttctatagac tgataggccc tatccacaag ggccatgact gggaaaagg atgggagcag 240
aaggagaatt gggatttttag ggtgcagcta cgctcaccct aaacttttgg tggcctggg 300
yatgtcttga ggcccagact gttaaccagg ctctgctggc ctgtttactc gtcaccacct 360
ctgcacctgc tgtcttgaga ctccatccag cccaggcac gccacctgct cctgagcctc 420
cactatctcc ctgtgacggg tgaacttcgt gtactgtgtc tcgggtccat atatgaattg 480
tgagcagggt tcatctattt taaacacaga tgtttacaaa ataaagatta tttcaaacca 540
ccggtgtggc tgccctggatg agtccttggg ggtaggtctc actcagacct tggcagtgat 600
g 601

```

<210> 31  
<211> 601  
<212> DNA  
<213> Homo sapiens

```

<400> 31
ggcagtggct ccaatctgtg gaccagtatt tcagctttcc ctgaagatca ggcagggtgc 60
cattcattgt ctttctctcc tagccccctc aggaagaag gactatattt gtactgtacc 120
ctaggggttc tggaaggga aacatggaat caggattcta tagactgata ggccctatcc 180
acaagggcca tgactgggaa aaggtatggg agcagaagga gaattgggat ttaggggtgc 240
agctacgctc accctaaact tttggtggcc tggggcatgt cttgaggccc agactgttaa 300
scaggctctg ctggcctgtt tactcgctcac cacctctgca cctgctgtct tgagactcca 360
tccagcccca ggcacgccac ctgctcctga gcctccacta tctccctgtg acgggtgaac 420
ttcgtgtact gtgtctcggg tccatatatg aattgtgagc agggttcatc tattttaaac 480

```

```

acagatgttt acaaaataaa gattatttca aaccaccggt gtggctgcct ggatgagtc 540
ttgggggtag gtctcactca gaccctggca gtgatgtggg agggagagag gcagtgtctg 600
t                                                                 601

```

```

<210> 32
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 32
ctgctggcct gtttactcgt caccacctct gcacctgctg tcttgagact ccatccagcc 60
ccaggcacgc cacctgtctc tgagcctcca ctatctccct gtgacgggtg aacttcgtgt 120
actgtgtctc ggggccatat atgaattgtg agcagggttc atctatttta aacacagatg 180
tttacaaaat aaagattatt tcaaaccacc ggtgtggctg cctggatgag tccttggggg 240
taggtctcac tcagaccctg gcagtgatgt gggagggaga gaggcagtgc tggtagaagc 300
rgctccagaa gcaaaggcaa cagcagtaga gtgaccacgg aagcggcaaa cattgtcttc 360
ccttctctac cttccctagt gccacctgca gggaggccca aagcaaagcc ccgttgcct 420
gcattgggct ggcactgcag aaataagatg aaacacagtt atcgagagga tgctgaacat 480
ctatgagcag gttttaaagc caagatgagt ctcactctgt tgtgtgggtc aggaacgggt 540
cttcctgaag gcatgagggt ggactggata atctttcaga tttgtgattg gatacctcgg 600
g                                                                 601

```

```

<210> 33
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 33
gcacgccacc tgctcctgag cctccactat ctccctgtga cgggtgaact tcgtgtactg 60
tgtctcgggt ccatatatga attgtgagca gggttcatct attttaaaca cagatgttta 120
caaaataaag attatttcaa accaccggtg tggctgcctg gatgagtcct tgggggtagg 180
tctcactcag accctggcag tgatgtggga gggagagagg cagtgtctgt agaagcagct 240
ccagaagcaa aggcaacagc agtagagtga ccacggaagc ggcaaacatt gtcttccctt 300
stctaccttc cctagtcca cctgcaggga ggcccaaagc aaagccccgt tgccttgcct 360
tggtgtggca ctgcagaaat aagatgaaac acagttatcg agaggatgct gaacatctat 420
gagcaggttt taaagccaag atgagtctca tctgtttgtg tgggtcagga acgggtcttc 480
ctgaaggcat gaggtgggac tggataatct ttcagatttg tgattggata cctcggggga 540
gcagaggcag actgggatct caggactgca ggtatttcat actttgggat atggaattga 600
t                                                                 601

```